

HAND AND PORTABLE POWER TOOLS

should have the blade or rivet extending through the handle. Also, both blade and handle should be insulated except at the tip.

Shock tools

A hammer should have a securely wedged handle suited to the type of head used. The handle should be smooth, free of oil, shaped to fit the hand, and of the specified size and length. Employees should be warned against using a steel hammer on hardened steel surfaces. Instead, a soft metal hammer or one with a plastic, wood, or rawhide head should be used. Goggles should be furnished and worn to protect against flying chips, nail heads, or scale.

Federal specifications for the hardness of ball peen hammers require that the Rockwell number on the base and peen be no less than 50 nor more than 60.*

Selection of the proper hammer is important. One that is too light is as unsafe and inefficient as one that is too heavy. Either is hard to control.

Sledge hammers can have two common unsafe conditions: split handles and loose or chipped heads. Because these tools are used infrequently in some industries, the heads may become loose or chipped and the defect not be noticed.

Some companies place a steel band around the head and bolt it to the handle to prevent the head from flying off. The heads should be dressed whenever they start to check or mushroom.

A hammer so light that it bounces off the work is hazardous, likewise, one too heavy and hard to control may cause body strain.

Riveting hammers, often used by sheet metal workers, should have the same kind of use and care as ball peen hammers and should be watched closely for checked or chipped faces.

Carpenter's or claw hammers are designed primarily for driving and drawing nails. Their shape, depth of face, and balance make them unsuitable for striking heavier objects, such as cold chisels.

Federal specifications for the hardness of claw hammers require the Rockwell C number of the face to be not less than 50 nor more than 60, and the Rockwell C number of the claw to be not less than 40 nor more than 55.

The faces should be kept well dressed at all times to reduce the hazard of nails flying while they are being started into a piece of wood. A checker-faced head is sometimes used to reduce this hazard.

Some companies have found eye protection advisable for all men working close together, as in a shipping room, when some are using these hammers.

When a nail is to be drawn from a piece of wood, a block of wood may be used under the head to increase the leverage and reduce the strain on the handle.

Spark-resistant tools

Spark-resistant tools of nonferrous materials are sometimes advised for use where flammable gases, highly volatile liquids, and other explosive substances are stored or used. The intensified sparks from steel tools are capable of igniting substances such as gunpowder, lint, TNT, carbon disulfide, and ethyl ether.**

In certain circumstances, steel coated with aluminum paint can emit sparks when struck with a metal striker (steel, brass, or spark-resistant alloys), and such sparks may ignite mixtures of flammable gases or vapors in air. The sparks are due to the thermite reaction between iron oxide and aluminum and are, therefore, produced only in the presence of iron oxide. The extent of this hazard depends on the nature of the surface covered and the nature of the paint, and it is increased if the painted steel is subjected to heat.***

*U.S. Government Printing Office, *Federal Specifications for Hammers, Mallets and Sledges*, GCG-H-86.

**U.S. Department of Commerce, Office of Technical Services, *Sparking Characteristics and Safety Hazards of Metallic Materials*. Technical Report No. NGF-T-1-57, PB 131131.

***For further information, see: McMahon, E. C. and R. T. Wray. *Aluminum Paint on Hot Surfaces*. Aluminum Research Laboratories, New Kensington, Pa.